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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,099	02/11/2002	Jai Young Woo	SEC.936	1563

7590

03/13/2003

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EXAMINER

NGUYEN, THONG Q

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/071,099

Applicant(s)

WOO ET AL.

Examiner

Thong Q. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings contain eleven sheets of figures 1-13 were received on 2/11/2002.
3. The drawings are objected to because the use of the references "241" and "243" in figure 7 is improper. The Examiner is of opinion that the reference "241" should be referred to the components labeled as -243—and vice verse. In other words, the reference "241" should refer to a shaft and the reference "243" should refer to the motor. See also the specification at page 10 and fig. 11. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
5. The disclosure is objected to because of the following informalities: In page 10, section [0042], line 1, "233" should be changed to -243—(see line 4 of the section). Appropriate correction is required.

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Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 13 is rejected under 35 USC 112, second paragraph because the feature "the motot (motor?" (line 1) lacks a proper antecedent basis. Applicant should note that claim 12, not claim 9, recites the antecedent basis for the motor.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3, 5, 9-11, 13 and 15-17, as best as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Holmes et al (U.S. Patent No. 4,627,009) in view of Kawashima (U.S. Patent No. 5,955,739).

Holmes et al disclose a computerized stage assembly supporting a wafer. The stage as described in columns 2-4 and shown in figures 1-6 comprises a wafer supporting element having stopping located on the edges to align and/or prevent the movement of the wafer, a first mechanism for moving the wafer supporting

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element in a x-direction, a second mechanism for moving the wafer supporting element in a Y-direction perpendicular to the x-direction, a third mechanism for moving the wafer supporting element in a z-direction perpendicular to the plane defined by x and y direction, a fourth mechanism for rotating and tilting the wafer supporting element in any desired position., and a computerized control system for controllable operating the movements of the stage. Holms et al also disclose that 1) the image of the wafer can be displayed in a display system (columns 1 and 5 and fig. 6); 2) each of the mechanism comprises a stepping motor for providing the power/operation of the mechanism (columns 3-4); and 3) the tilting angle and speed of tilting operation can be controlled by the user (columns 4-6). As such the computerized stage assembly provided by Holms et al meets the features recited in the claims except the feature relating to the use of optical unit for observation. However, the use of a microscope having an optical unit for viewing/observing a wafer which is located in a movable stage in three direction and also in a tilted manner is clearly known to one skilled in the art as can be seen in the microscope provided by Kawashima. See columns 5 for the details relating to the movable stage and columns 14-16 and fig. 14 for the microscope having an optical unit comprises at least one objective lens system (100) and eyepiece system (98) for observation. Thus, it would have been obvious to one skilled in the art at the time the invention was made to utilize the computerized stage assembly provided by Holms et al in a microscope having an optical unit as

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provided by Kawashima for the purpose of providing a means for observation of the wafer located in the movable stage.

10. Claims 7-8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holmes et al in view of Kawashima as applied to claims 1 and 9 above, and further in view of Schram (U.S. Patent No. 4,938,654).

The combined product as provided by Holms et al and Kawashima as described above does not clearly disclose that the wafer is secured to the wafer supporting element via a vacuum chuck and a motor for generating power to the vacuum chuck; however, the use of vacuum pressure for holding a wafer is known to one skilled in the art as can be seen in the system provided by Schram. In particular, Schram teaches the use of vacuum chuck for holding a wafer by vacuum pressure. In regard to the use of a motor for generating power to operate a vacuum chuck, such use is well known to one skilled in the art as an inherent feature from the mechanism for operation in the art of Schram. Thus, it would have been obvious to one skilled in the art at time the invention was made to modify the combined product provided by Holmes et al and Kawashima by using vacuum chuck and mechanism having at least one motor for generating power to the vacuum chuck suggested by Schram for the purpose of securing the wafer to its support element.

11. Claims 4, 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holms et al in view of Kawashima as applied to claims 1 and 9 above, and further in view of An (U.S. Patent No. 5,852,300).

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The combined product as provided by Holmes et al and Kawashima as described above does not disclose the use of detecting elements for detecting the presence of the wafer on its support element; however, the use of detecting elements with the movable stage for detecting a flat region/area of a wafer and thus the presence of the wafer is a wafer inspection system is known in the art as can be seen in the system provided by An. See columns 2 and 5. Thus, it would have been obvious to one skilled in the art at time the invention was made to modify the system provided by Holmes et al and Kawashima by using detecting elements as suggested by An for the purpose of detecting the flat zone of a wafer and inherently the presence of the wafer on a support element for the purpose of inspecting the wafer.

Conclusion

12. The additional references are cited as of interest in that each discloses an optical device having a movable stage in at least two perpendicular directions. The use of detecting system is also disclosed in each of the Patent Nos. 4,748,335 and 5,153,916.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Nguyen whose telephone number is (703) 308-4814. The examiner can normally be reached on M-F.

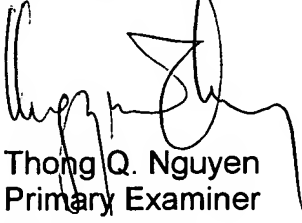
The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.



Thong Q. Nguyen
Primary Examiner
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March 7, 2003